**1**

**9 0 1 4 7**

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| **Level 1 Mathematics, 2006**  90147 Use straightforward algebraic methods  and solve equations |

Credits: Four

You should answer ALL the questions in this booklet.

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| *For Assessor’s use only* | **Achievement Criteria** | |  |
| **Achievement** | | **Achievement with Merit** | **Achievement with Excellence** |
| Use straightforward algebraic methods. | | Use algebraic methods and solve equations in context. | Use algebraic strategies to investigate and solve problems. |
| Solve equations. | |  |  |
| **Overall Level of Performance (all criteria within a column are met).** | | | |

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You are advised to spend 30 minutes answering the questions in this booklet.

PETER, PAUL AND MARY (PLUS FRIENDS)

You should show **ALL** working.

QUESTION ONE

Solve these equations:

(a) 2(*x* − 3) = 8

(b) 5*x* + 7 = *x* − 2

(c) 3*x*(*x* + 4) = 0

QUESTION TWO

Expand and simplify:

(3*x* − 1)(*x* − 2) =

QUESTION THREE

Simplify:



QUESTION FOUR

Mary prints flowers onto different-shaped tablecloths.

Mary’s rule for calculating the total number of flowers, *F*, she prints onto a tablecloth is:

 where *n* is the number of edges on the tablecloth.

Use this rule to calculate the total number of flowers, *F*, she prints on a tablecloth that has 6 edges.

The total number of flowers, *F* =

QUESTION FIVE

Simplify:



QUESTION SIX

Peter has more than twice as many CDs as Mary.

Altogether they have 97 CDs.

Write a relevant equation, and use it to find the **least number** of CDs that Peter could have.

Least number of CDs that Peter could have =

QUESTION SEVEN

Paul bought some CDs in a sale.

He bought four times as many popular CDs as classical CDs.

The popular CDs, *P*, were $1.50 each.

The classical CDs, *C*, were 50 cents each.

He spent $52 altogether.

Solve these equations to find out how many classical CDs Paul bought.

 4*C* = *P*

1.5*P* + 0.5*C* = 52

The number of classical CDs Paul bought =

QUESTION EIGHT

James is five years old now and Emma is four years older.

Form a relevant equation and use it to find out how many years it will take until James’s and Emma’s ages in years, multiplied together, make 725 years.

**Show all your working.**